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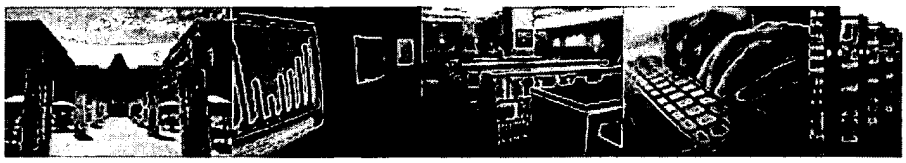

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***Case serial number:** 09/ 582,442
If not related to a patent application, please enter NA here.

Class / Subclass(es) 514/252, 256, 269, 274, 275
544/238, 295, 296, 298, 311, 317, 319, 320, 326, 329.

Earliest Priority Filing Date: 12-26-97

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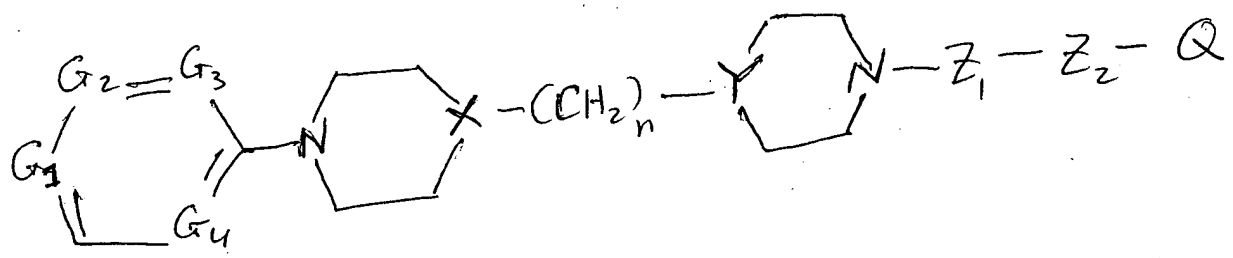
9/582,442 Query



- G_1, G_2, G_3 & G_4 are independently N or CH - but at least one is N;
- X is CH or N;
- Y is N;
- Z_1 is $-SO_2-$ or $-CH_2-$;
- Z_2 is a bond, alkylene, alkenylene or alkynylene.
- Q is a ring

See also attached claims 1 & 20

#170
PS

PATENT
1110-0271P

IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant: NISHIDA, Hidemitsu et al. Conf.:3582

Appl. No.: 09/582,442 Group: 1624

Filed: June 26, 2000 Examiner: T. TRUONG

For: AROMATIC COMPOUNDS HAVING CYCLIC AMINO GROUPS AND SALTS THEREOF

AMENDMENT UNDER 37 CFR 1.111

Assistant Commissioner for Patents
Washington, DC 20231

June 12, 2002

Sir:

In reply to the Office Action of March 12, 2002, the following amendments and remarks are respectfully submitted in connection with the above-identified application.

IN THE CLAIMS:

Please amend claims 1, 2, 6, and 17 to read:

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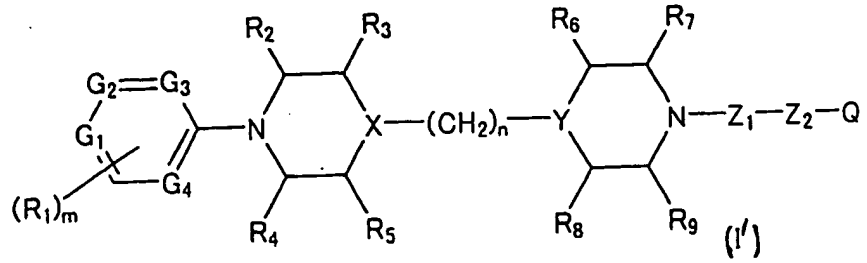
1. (thrice amended) A method for treating a disease for which the FXa inhibitor is indicated, comprising: administering an effective amount of a composition comprising a pharmaceutical carrier and at least one compound represented by the following formula (I') or a salt thereof:



wherein G_1, G_2, and G_3 are independently CH or N and G_4 is CH, provided that one or two of G_1 to G_3 is N;

X is CH and Y is N;

Z_1 is a group represented by the formula $-SO_2-$ or $-CH_2-$;

Z_2 is a single bond, a lower alkylene group, a lower alkenylene group or a lower alkynylene group;

Q is an optionally substituted aryl group in the form of a monocyclic or fused hydrocarbon ring having 6-14 carbon atoms or an optionally substituted heteroaryl group in a monocyclic or fused cyclic form having 1-4 heteroatoms selected from the group consisting of oxygen, sulfur, and nitrogen atoms;

R_1 is either any substituent selected from group A (a hydrogen atom; a halogen atom; a trifluoromethyl group; a trifluoromethoxy group; a carboxyl group; a carbamoyl group; an amino group; a cyano group; a nitro group; a lower alkanoyl group; a lower alkoxy group; a lower alkoxycarbonyl group; a mono- or di-substituted lower alkylamino group; a cyclic amino group optionally substituted by a lower alkyl group or a hydroxyl group and being a pyrrolidinyl group, a piperidinyl group, a morpholino group, or a piperazinyl group; a lower alkanoylamino group; a phenyl group; a phenoxy group; a benzyloxy group; a benzoyl group; a mercapto group; a lower alkylthio group; a lower alkylthiocarbonyl group; a hydroxyl group; or a mono- or di-substituted lower alkylaminocarbonyl group), or an oxygen atom that forms a N-oxide group with N in any one of G1 – G4, or a lower alkyl group or a lower alkenyl group that may be substituted with a desired number of substituents of group A or a lower alkoxy group or a lower alkoxy group which may be substituted with a desired number of substituents of group A or a lower alkoxy group;

each of R_2, R_3, R_4, R_5, R_6, R_7, R_8 and R_9 forms an oxo group when combined with the carbon atom on the ring to which they are bound, or they are each a hydrogen atom, a carboxyl group, a lower alkylcarbonyl group, a lower

alkoxycarbonyl group, a lower alkoxycarbonylalkylcarbonyl group, an optionally mono- or di-lower alkyl substituted carbamoyl group, a lower alkoxycarbamoyl group, a lower alkoxycarbonylalkylcarbamoyl group, a pyrrolidin-1-ylcarbonyl group, a morpholinocarbonyl group, a piperazin-1-ylcarbonyl group that may be substituted by a methyl group in 4-position, a piperidin-1-ylcarbonyl group that may be substituted by a methyl group or a hydroxyl group in 4-position, an N-phenylcarbamoyl group or a group represented by the formula -$CONH(CH_2)_pS(O)_qR_{10}$ or -$CONH(CH_2)_rNR_{11}R_{12}$, or a lower alkyl group that may be substituted by R_{15};

each of R_{10}, R_{11} and R_{12} independently represents a hydrogen atom, a lower alkyl group, a phenyl group or a lower alkylphenyl group;

R_{15} is a carboxyl group, a lower alkoxycarbonyl group, a hydroxyl group, a lower alkoxy group, a lower alkanoyloxy group, an amino group, a mono- or di-substituted lower alkylamino group, a lower alkanoylamino group, a lower alkylsulfonylamino group, a cyclic amino group optionally substituted by a lower alkyl group or a hydroxyl group and being a pyrrolidinyl group, a piperidinyl group, a morpholino group, or a piperazinyl group, or an N-hydroxyimino group;

provided that R_6 may also represent two lower alkyl groups in geminal;

also provided that if any one of the substituents R_2 - R_9 includes cyclic group, such cyclic group may be substituted by one or two lower alkyl groups;

m is an integer of 0 - 3 and n is 1, p is an integer of 0 - 4, q is an integer of 0 - 2, and r is an integer of 1 – 4.

2. (thrice amended) The method according to claim 1, wherein the substituent of the optionally substituted aryl or heteroaryl group as Q of the formula (I') is 1 - 4 groups in any combinations that are selected from among substituents of either group B (a halogen atom, a trifluoromethyl group, a trifluoromethoxy group, a trifluoromethanesulfonyl group, a carboxyl group, a carbamoyl group, an amino group, a cyano group, a nitro group, a lower alkanoyl group, a lower alkoxyl group, a lower alkoxycarbonyl group, a mono- or di-

#21 F
PS

BOX AF
PATENT
1110-0271P

IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant:	NISHIDA, Hidemitsu et al.	Conf.:	3582
Appl. No.:	09/582,442	Group:	1624
Filed:	June 26, 2000	Examiner:	T. TRUONG

For: AROMATIC COMPOUNDS HAVING CYCLIC AMINO GROUPS AND SALTS THEREOF

AMENDMENT PURSUANT TO 37 CFR 1.607

Box AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

June 11, 2003

Sir:

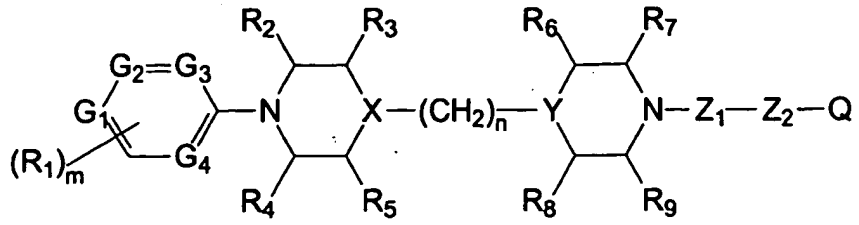
The following amendments and remarks are respectfully submitted in connection with the above-identified application.

IN THE CLAIMS:

Please add the following new claims:

F1

20. (New) A compound represented by the following formula (I) or a salt thereof:



(I)

wherein

at least one of G_1, G_2, G_3 and G_4 is N and the remaining are independently CH or N;

X is CH or N;

Y is N;

Z_1 is a group represented by the formula $-SO_2-$;

Z_2 is a single bond;

Q is an aryl group being unsubstituted or substituted with 1 to 4 substituents selected from the group consisting of the Group B or a lower alkyl group that may be substituted by a desired number of substituents of Group B, wherein Group B is:

a halogen atom,

a trifluoromethyl group,

a trifluoromethanesulfonyl group,

a carbamoyl group,

an amino group,

a cyano group,

a nitro group,

a lower alkanoyl group,

a lower alkoxyl group,

a lower alkoxycarbonyl group,

a mono- or di-substituted lower alkylamino group,

a lower alkanoylamino group,

a cyclic amino group,

a mercapto group,

a lower alkylthio group,

a lower alkylsulfonyl group,

a hydroxyl group or a mono- or di-substituted lower alkylaminocarbonyl group,

an amidino group,

F1

a group of the formula $-NHCR_{13}-NHR_{14}$

wherein R_{13} is an optionally cyano-substituted imino group or a group $=CHNO_2$;

R_{14} is a hydrogen atom or a methyl group,

a phenyl group,

a heteroaryl group,

a heteroaryloxy group, or

or a group represented by heteroaryl-S(O)t,

wherein t is an integer of 0 - 2,

the heteroaryl group of group B is a 5- or 6-membered aromatic monocyclic group containing not more than four oxygen atoms, sulfur atoms or nitrogen atoms, provided that

all aromatic rings of Group B may be mono-, di-, or tri-substituted by any substituent of Group C,

wherein Group C is

a halogen atom,

a hydroxyl group,

an amino group,

a mono- or di-substituted lower alkylamino group,

a cyclic amino group,

a mono- or di-substituted lower alkylaminocarbonyl group,

F1

a lower alkyl group,

a lower alkoxy group or

R_1 is any substituent selected from group A

wherein Group A is

a hydrogen atom,

a halogen atom,

a trifluoromethyl group,

a carbamoyl group,

an amino group,

a cyano group,

a nitro group,

a lower alkanoyl group,

a lower alkoxy group,

a lower alkoxycarbonyl group,

a mono- or di-substituted lower alkylamino group,

a cyclic amino group,

a lower alkanoylamino group,

a phenyl group,

a benzoyl group,

a mercapto group,

a lower alkylthio group,

a hydroxyl group or

a mono- or di-substituted lower alkylamino- carbonyl group, R_1 may also be an oxygen atom that forms a N-oxide group with N in any one of G_1 - G_4, or a lower alkyl group, a lower alkoxy group or a lower alkenyl group that may be substituted with a desired number of substituents selected from

a hydrogen atom,

a halogen atom,

an amino group,

a cyano group,

a lower alkoxy group,

a mono- or di-substituted lower alkylamino group,

a lower alkanoylamino group, or

a hydroxyl group;

one of R_2, R_3, R_4, R_5 is hydrogen and the remaining are selected from a lower alkoxycarbonyl group, an optionally

mono- or di-lower alkyl substituted carbamoyl group, an N-phenylcarbamoyl group or a group represented by the formula $-CONH(CH_2)_pS(O)_qR_{10}$ or $-CONH(CH_2)_rNR_{11}R_{12}$, or a lower alkyl group that may be substituted by R_{15};

R_6 forms a carbonyl group with the carbon atom on the ring to which it is attached;

each of R_7, R_8 and R_9 is a hydrogen atom, a lower alkoxycarbonyl group, an optionally mono- or di-lower alkyl substituted carbamoyl group, an N-phenylcarbamoyl group or a group represented by the formula $-CONH(CH_2)_pS(O)_qR_{10}$ or $-CONH(CH_2)_rNR_{11}R_{12}$, or a lower alkyl group that may be substituted by R_{15};

F1

each of R_{10}, R_{11} and R_{12} independently represents a hydrogen atom, a lower alkyl group, a phenyl group or a lower alkylphenyl group;

R_{15} is a carboxyl group, a hydroxyl group, or an amino group;

m and n are independently an integer of 0-3,

p is an integer of 0-4,

q is an integer of 0-2, and

r is an integer of 1-4;

provided that if any one of the substituents R_2, R_3, R_4, R_5, R_7, R_8, or R_9 includes a cyclic group, such cyclic group may be substituted by one or two lower alkyl groups.